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## **An Investigation on the Relationship between Online Distance Learning with Learning Usability**

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### **Abstract**

Usability is absolutely critical in creating any online tool, e-learning or otherwise. From the user's perspective usability is important because it can make the difference between performing a task accurately and completely or not, and enjoying the process or being frustrated. Usability is an elusive concept that reflects user's experience of a product, artefact or service and the level of success that has been established for the product/service. In this paper, we seek to understand and evaluate the usability of online distance learning mode from the perspectives of student. The findings of the study suggest usability play significant roles in the student application of online distance learning. In addition, the application of the learning mode has also resulted in increasing effectiveness of student learning. We then offer research implication and suggest for future research directions. In all cases, lack of usability can cost time and effort, and can greatly determine the success or failure of a system.

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**Keywords:** Online distance learning; usability; usability evaluation

### **1. Introduction**

The new generations are very-very social oriented and they prefer attractive systems. The same time technology is their second nature. As technology matures the way tools look and feel like will play an increasingly crucial role to their adoption. The development and adoption of e-learning have not only changed the traditional face-to-face classroom-based teaching and learning, but has also revolutionized the distance learning mode to make it more open and more accessible to those who need it, when they

need it, anytime, anywhere. As online distance learning programs have become increasingly popular among colleges and universities as a way to expand enrolments, interests among researchers in the fields of IS and education to understand the subject have also flourished.[9]

Of these scenario the usability of the online distance learning programs are predetermine. Many quality issues revolve around online distance learning in particular. They include the subjects of the programs offered, the technology, facilities and infrastructure, faculty members, students and attitudes. The impacts to the usability of online distance learning have not been well understood. Thus, it is imperative to investigate the usability of the online distance learning system, and most importantly understand how these variables can influence the success and value of the programs

Thus, we conduct the study in order to fulfill these objectives, to investigate usability of online distance learning program.

## **2. Review of Literature**

In today's business world, the Internet is a major technological advancement that presenting not only for the society but also that of universities globally. In light of this, universities have to capitalize on the Internet for teaching, and one progressive development of this is the use of online delivery methods [1]. Online education has generated remarkable excitement both inside and outside for higher education. At certain aspects, it offers the potential to provide learning to new audiences; for others, it offers the opportunity fundamentally to transform learning delivery and the competitive landscape [2]. Based on previous scholar, distance learning is probably the oldest and best-known concept. It was originally intended to cater particularly for students disadvantaged by their geographical remoteness from university campuses [1].

### **Usability**

Usability is an elusive concept that reflects user's experience of a product, artifact or service and the level of success that has been established for the product/service. While the concept has been extensively studied to evaluate the success and effectiveness of e-learning that supports traditional teaching and learning, it has not been widely applied to gauge other usability measurement that include student learning autonomy, active learning, effectiveness and learn ability.[8]

Two types of usability from the learning approach are authentic learning and active learning. Authentic learning is the "extent to which students have the opportunity to solve real world problems that are authentic. On the other hand, active learning is the "extent to which students have the opportunity to take an active role in their learning" [3].

Another element that can measure the usability of online distance learning programs is student autonomy, in which it is defined as "students have opportunities to initiate ideas, make their own learning decisions, and the locus of control is student oriented" [4]. The dimensions that explain student autonomy are making decisions about learning, playing an important role in learning, approaching learning in own way, working during times in finding convenient and controlling of my learning. In utilizing the learning mode,[11] it is hoped that the students' preferred form of a class is met and the actual form should represent that their preferences were met or exceeded. [9]

From the context of effectiveness, Webster and Hackley[5] suggested the following dimensions that can be used to capture the concept of effectiveness: student involvement and participation, cognitive engagement, technology self-efficacy (i.e. the belief that one has the capability to interact with a given

technology), perceived usefulness of the technology employed, and the relative advantage or disadvantage of online delivery.[10]

### 3. Methodology

#### The Sample

The sample of the study consists of students who currently engage in an online distance learning program, in one of the public universities in Malaysia. The population frame was derived from the unit that handles the program. A total of 200 questionnaires were distributed to the sample and 185 responses were received, yielding a response rate of 92.5%.

#### The Instrument

The main approach taken to meet the objectives of the research is hypothesis testing, which will be conducted via a survey. Several reasons determine the proposed method as the most appropriate. First, the goal of the study is to anticipate the associations of variables. As mentioned by [6] Sekaran (2005), hypothesis testing (which the methods of collecting data include surveys) establishes the independence of two or more factors in a situation (pp 123). Second, since hypothesis testing can be conducted either as quantitative or qualitative study, survey design as the technique for collecting data is suitable to be employed. Third, since there are a large number of organizations as the system users, surveys are particularly useful in describing the characteristics of large population as they make large samples feasible [7] (Babbie, 1999, pp 251). Fourth, standardized questionnaires as survey research instruments have an important strengths as they define the concepts and operationalization in the most relevant to the research topic [5]. Finally, the survey will also enable hard data to be collected from large number of population and quantitative analysis performed for validating the proposed research model

The survey instrument used for this study comprised of 3 sections. The first section dealt with the respondent's profile and the use or application of the online distance learning system. The second section asked about the respondent's perception on the system quality. The last section required the respondents to answer items related to usability of the online distance learning. The items on usage and application, determinants and usability were measured as likert scale, ranging from 1 as strongly disagree to 7 as strongly agree.

Based on related literature review and an observation of the actual system, seven measures for online distance learning system usage were developed. They were designed based on the context and modules of the system. On the other, 4 items on usability were adopted from [4] walker et al, Lewis and Fraser.

Usability	- Active Learning	Walker et al. (2005)
	- Autonomy	Walker et al. (2005)
	- Learn ability	Lewis (1995)
	- Effectiveness	Lewis (1995)
	- Enjoyment	Fraser (1981) in Walker et al. (2005)

## Assessing Reliability and Validity

In this study, reliability test was performed as methods of assessing the consistency of the instrument scales. Although there are three different reliability tests, only the internal consistency reliability, specifically the coefficient alpha that assesses the summated scale was used. Prior to actual data collection, a pilot study was conducted to assess the reliability and suitability of the instrument. 30 students who enrolled in the online distance learning program participated in the pilot test. The results of the pilot test indicated the instrument was reliable to be used for the actual data gathering.

After the data was gathered, a reliability test was performed to measure the internal consistency of instructor attitude, student time and support, autonomy, effectiveness and use of online distance. The test yields the overall coefficient  $\alpha=.915$  and individual constructs reliability that range from .915 to .955. The result indicates the instrument is reliable and internally consistent.

## Results and Discussion

The demographic results show that most of the respondents are female (81.1%) while male is 17.8%. It also shows that most of the respondents are single 66.1% and 40.5 % of the respondents have 2- 4 year working experience.

The results of the study, which are presented based on research goals and hypothesis.

From the data analysis, the hypothesis is found:

H1: There is an influence of system quality toward usage.

Hypothesis H1 is supported as there is a significant correlation between system quality toward usage where p-value was lower than confidence level value (0.05). However, with the r-value of 0.250\*, the correlation is found to be positive.

H2: There is an influence of system quality toward learning.

Hypothesis H2 is supported as there is a significant correlation between system quality toward learning where p value was lower than confidence level value (0.05). However, with r-value of 0.281\*, the correlation is found to be positive.

H3: There is an influence of system quality toward usability.

Hypothesis H3 is supported as there is a significant correlation between system quality toward usability where p-value was lower than confidence level value (0.05). However, with r-value of 0.548\*, the correlation is found to be positive.

## 4. Conclusion

Online distance learning has been a vital learning method nowadays. The existing of this new technology of learning and teaching enhances by the instructor is imperative to ensure the sustainability of this technology. In order to ensure the effectiveness of this technology it was found that there is an influence of usability and enhances the use of the system and leads to the system effectiveness.

The research is deemed significant as it extends the usability model in the context of online distance learning. Through the conceptual work, we intend to provide an initial explanation on how each quality

characteristic from the perspectives of the system quality, user and learning acceptance take places an impact to online distance learning usability.

In addition, we believe the exercise is important as previous studies have given more emphasis on the performance indicators, in which the usability of the learning mode is not sufficiently captured and understood. Moreover, evidences of usability dimensions will enable programs providers, faculty and higher learning institutions to react accordingly for improving the performance.

Future researcher should underpin other issues concerns such as the aspect of cognition to really understand how individual makes decision in determining system usage. Taken as a whole, it was believed that the results take value to the researchers, not just because it validated most of the hypothesis but taking other issues for researchers to investigate further.

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